PERFORMANCE WORK STATEMENT
TSAWP MULTIPLE AWARD CONTRACT TASK ORDER
PR-R3-18-00270 ~~PR-R3-18-00###~~
June 2018

A. TITLE: Technical Support for Water Quality Monitoring in Kentucky Tributaries to the Tug Fork River for Ionic Toxicity TMDL Development

B. OBJECTIVES AND BACKGROUND

Objectives

The purpose of this Performance Work Statement (PWS) is to support possible ionic toxicity Total Maximum Daily Loads (TMDL) development within the Tug Fork River watershed by monitoring water quality on Kentucky tributaries to the Tug Fork River. This will support TMDL development for West Virginia waterbodies where ionic toxicity has been identified as a contributing cause of biological impairment. Specifics of each task and the accompanying deliverables are discussed in the Section C.

Background on West Virginia Ionic Toxicity TMDLs

To establish a TMDL for waterbodies identified as biologically impaired on West Virginia's Section 303(d) list, the West Virginia Department of Environmental Protection (WVDEP) identifies the causes of the biological impairment, *i.e.,* the type of pollutant(s) that will be allocated in the TMDL(s) to address the biological impairment, through a stressor identification procedure completed during the TMDL development phase. In the course of working on previous TMDLs, WVDEP identified certain waters as biologically impaired due to ionic toxicity. Ionic toxicity results from the presence of excessive amounts of dissolved solids (e.g., mineral salts) in a waterbody and can cause biologic impairment by adversely impacting aquatic life. While WVDEP has historically had sufficient information regarding instream ionic toxicity levels and their effects on benthic macroinvertebrates to identify ionic toxicity as a cause of biological impairment in these waters, it lacked sufficient information about which particular dissolved solid(s) (e.g., chlorides, sulfates, potassium, magnesium, etc.) caused the ionic stress, and their associated impairment thresholds and their sources, to establish a defensible TMDL. In the fall of 2010, EPA and WVDEP began a project to develop a pilot TMDL for ionic toxicity in streams in the Upper Kanawha Watershed. EPA and WVDEP collaborated on workgroups focused on TMDL planning, endpoint development, model development, and treatment technology. During the pilot project, a TMDL endpoint was proposed for specific conductivity and a model was developed. WVDEP ended participation in the pilot project in April 2012, citing state legislation that required the development of new assessment methodology to determine biological impairment. Since that time, WVDEP has developed hundreds of pollutant TMDLs that address biological impairment caused by stressors other than ionic toxicity. EPA Region III and WVDEP entered into a Memorandum of Agreement (MOA) on June 13, 2017 in which WVDEP acknowledged its responsibility to establish TMDLs for biologically impaired waters and agreed to a schedule to establish by no later than June 30, 2026, TMDLs for 467 of the 573 waters at issue in the ongoing litigation *Ohio Valley Environmental Coalition*

(OVEC), et al. v. Pruitt, et al., Case No. 3:15-cv-00271 (S.D. W.Va. February 14, 2017). The MOA establishes a shorter term schedule to develop TMDLs on 150 biologically impaired waters by December 31, 2021 and a longer term schedule to develop TMDLs on 317 biologically-impaired waters by June 30, 2026 (including ionic toxicity impairments on 187 of these waters). In the event WVDEP does not submit TMDLs in accordance with the MOA schedule, EPA will be obligated to establish those TMDLs.

C. TASKS

The contractor shall provide support for the below tasks. Written technical direction shall be utilized to provide further detail on specific work included in the PWS, provide guidance, or approve or comment on deliverables. The Task Order Contracting Officer Representative (TOCOR), the Alternate TOCOR (if the TOCOR is on leave or travel), and the Contracting Officer are the only individuals authorized to issue technical direction. The contractor shall anticipate working with the TOCOR, staff leads from EPA Water Protection Division (WPD) and, WVDEP~~, Maryland Department of Environment (MDE) and District of Columbia Department of Energy and Environment (DOEE)~~ to furnish the requested technical assistance. **However only the TOCOR may issue written technical direction.**

Task 1: Kickoff Meeting, Reporting, and Communication

The contractor shall participate in a Kickoff Meeting with the TOCOR either in person or via conference call to discuss the following: points of contact, roles and responsibilities, timelines, the schedule of benchmarks, milestones and deliverables, establish dates and times for monthly calls, monthly technical progress reports, and general Task Order administrative information. The technical progress reports shall include status updates of all of the tasks of this PWS.

The TOCOR will coordinate and set-up monthly working calls between EPA staff and the contractor's technical lead to discuss the status and progress of the work under this Task Order. The contractor shall participate in these monthly calls. The frequency of the monthly conference calls may be modified based on project status at the request of the contractor and only as approved by EPA.

The contractor shall notify the TOCOR of any problems, delays or questions as soon as they arise, including immediate written notification of any Task Order delays. The contractor shall provide a written monthly status report in accordance with contract requirements which shall be used for invoice review purposes. All reporting shall be provided in accordance with the PWS Sections E and F.

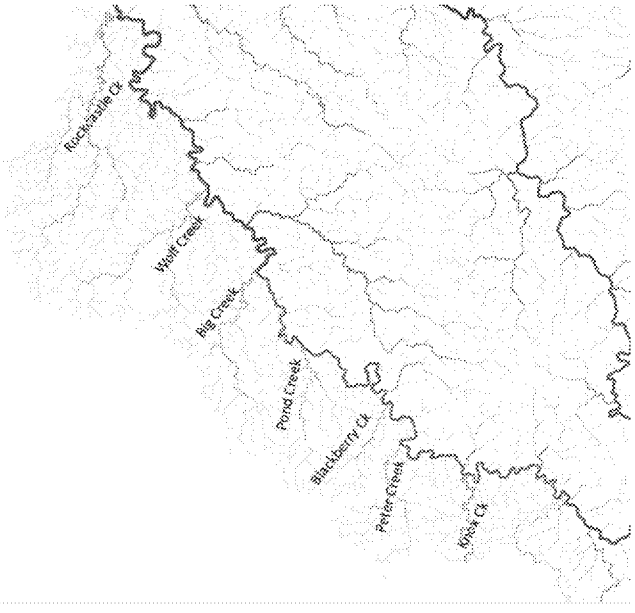
In general, written materials including meeting summaries shall be furnished by the contractor within five business days after request in draft form for the TOCOR to review; then a final written deliverable would be expected within five business days after receipt of written technical direction from the TOCOR, including the TOCOR's comments and edits to the draft deliverable.

Task 1 Deliverables: Meeting summaries following conference calls

Task 2: Water Quality Monitoring in Kentucky Tributaries to the Tug Fork River

To support possible ionic toxicity TMDL development within the Tug Fork River watershed, the contractor shall monitor and analyze water qualitys samples from seven (7) tributaries to the Tug Fork River located within Kentucky. No less than six (6) and up to ten (10) monthly monitoring rounds must occur within the proposed model calibration period from July 1, 2018 to June 30, 2019. Monitoring and laboratory analyses will be conducted in accordance with an EPA approved Quality Assurance Project Plan (QAPP) that follows WVDEP's QAPP and standard operating procedures (SOPs) to ensure data quality sufficient for use in assessment decisions and model development. All water quality samples must be analyzed by a laboratory that has been approved through the WVDEP laboratory Quality Assurance Program, as described in the SOP. It is anticipated that each monitoring round could take up to two days of field work. An effort should be made to collect grab samples to represent conditions at all hydrologic flow conditions ~~Monitoring is anticipated to occur during all hydrologic flow conditions~~ (baseflow to average to high flow conditions). Monitoring will occur ~~at the mouth of the~~for each of the ~~following~~ Tug Fork River tributaries located in Kentucky listed below. One monitoring stations should be established upstream of the confluence to avoid influence from backwater from the Tug Fork, in the nearest riffle area available and reasonably accessible. The locations for the monitoring stations will be discussed and approved in the Kickoff Meeting, described in Task 1. Monitoring stations may be adjusted only upon approval.:

- Rockcastle Creek
- Wolf Creek (at Lovely)
- Big Creek (at Nolan)
- Pond Creek (at Goody)
- Blackberry Creek
- Peter Creek
- Knox Creek



[PAGE * MERGEFORMAT]

Commented [RW1]: Should there be lab certification language inserted here?

Commented [RW2]: Do you want a single grab at high flow or multiple samples though out a rain event along a hydrograph? The latter will be expensive.

Continuous conductivity monitors could be deployed to capture continuous data over the year long monitoring period. The sensors are about $750 each plus labor to calibrate, deploy and maintain. I can see the contractor deploying at the beginning of the year long period and then data download and cleaning at each monthly grab sample visit.

I doubt this is in the budget but if we go this route we should request the equipment be sent to EPA upon completion of the monitoring. Wheeling would likely use them or we can loan to a state

Commented [RMS3R2]: Changed the language from "during all" – which made it sound like we were expecting multiple samples during a storm event.

We would not need the specific conductivity data for our TMDL effort. We employ these in certain scenarios – but cannot do this for all streams we are monitoring for this effort.

Commented [RW4]: Should you give some recommendations about specific locations (i.e., how close to state border)?

Field ~~and~~ or laboratory analyses will be performed for the following parameters:

Parameter	Units	Field/Lab	Tributaries	Notes
Temperature	Deg C	Field	7	
DO	mg/l	Field	7	
pH	S.U.	Field	7	
Specific Conductivity	umhos/cm	Field	7	If suspected field equipment failure, may rely on laboratory analysis
Flow Discharge	cfs	Field	7	
Fecal coliform	Colonies/100 ml	Lab	7	Requires analyses within 24-hour ~~analyses~~holding period*
TSS	mg/l	Lab	7	
TDS	mg/l	Lab	7	
Acidity (hot)	mg/l	Lab	7	
Alkalinity	mg/l	Lab	7	
Chloride	mg/l	Lab	7	
Sulfate	mg/l	Lab	7	
Al (Tot)	mg/l	Lab	7	
Al (Dis)	mg/l	Lab	7	
Fe (Tot)	mg/l	Lab	7	
Fe (Dis)	mg/l	Lab	7	
Mg (Tot)	mg/l	Lab	7	
Ca (Tot)	mg/l	Lab	7	
K (Tot)	mg/l	Lab	7	
Na (Tot)	mg/l	Lab	7	
Mn (Tot)	mg/l	Lab	3	Required only on Wolf Creek, Pond Creek and Blackberry Creek

Note(s): * Fecal coliform analyses need to be performed within a 24-hour holding time to be considered by WVDEP for assessment purposes.

Laboratory analyses will be completed by an EPA certified laboratory. All analytical data will be submitted in an electronic spreadsheet according to a template to facilitate uploading to WVDEP's Watershed Assessment Branch (WAB) database. Electronic data will be transferred directly from the analytical laboratory's Laboratory Information Management System (LIMS) using WVDEP's template. This template will be provided and discussed during the kick-off meeting.

Task 2 Deliverables: Monitoring and analytical results for seven Kentucky tributaries to the Tug Fork River collected in no less than six and up to ten monthly monitoring rounds occurring between July 1, 2018 and June 30, 2019.

D. SCHEDULE OF BENCHMARKS AND DELIVERABLES

Commented [RMS5]: Jeff said we will rely on lab analysis of specific conductivity if we suspect there could be a problem with field equipment. He said that equipment failure is rare. Since this is about ionic stress – maybe it would be good to request confirmation in the lab??

Commented [RW6]: The fecal lab method requires analysis within 6 hours. Should try to have contractor meet the holding time if possible. WV's 24 hour is likely to allow for overnight shipping of fecal samples.

If WV plans to adopt EPA's 2012 rec criteria should E. coli be included too in case of a criteria change during TMDL development?

Commented [RMS7R6]: The decision to go to a 24 hour hold time was made way back in the 1990's, after the program determined that the variation between analysis results for samples held 6 hour vs 24 hour, we no greater than duplicate samples held for the same time. All of our samples are held for 24 hours.

E coli is more expensive –and would have resulted in roughly $84,000 if we took 12 rounds of samples everywhere. We are opting not to use E. coli for that reason in this study. We have conducted side-by-side sampling for several stations/locations in the past couple of years to allow us to reasonable translate our FC impairments/TMDLs to E. coli when/if needed. We do not anticipate a switch to E. coli in the current triennial review. However – should E. coli be used for Kentucky? If so, John said that the E. coli adds $20 per sample.

Commented [RW8]: I remember hearing Wheeling talk about concerns related to elevated bicarbonate (HCO_3) in streams which drives alkalinity. Is there a need to sample for Bicarbonate in addition to alkalinity? I don't know the answer

Commented [RMS9R8]: John said that all of our data up until now has been for alkalinity and from what he understands there isn't a major difference in bicarbonate and alkalinity. Please let us know if you disagree.

All deliverables developed under this Task Order must be provided to the TOCOR in an electronic format supported by EPA and WVDEP. Laboratory analytical results will be directly transferred from the laboratory's LIMS as discussed in Task 2. Reports must be of high quality. Work must reflect a high level of technical proficiency and be clearly explained and documented.

As a general rule, upon receipt of a draft deliverable, EPA will have three weeks to collate internal and external comments and return to the contractor. The contractor will then have an additional one week to make changes, which will be reviewed by EPA. EPA will have one week to indicate any necessary final adjustments. If final adjustments are needed, the contractor will have three additional business days to finalize the document.

The deliverables and anticipated completion dates are as follows:

Task	Deliverables	Task Completion Timeframe	Task Finalization
Task 1 – Initiate project kickoff conference call	Deliverable 1: Meeting summary	Within 7 days of contract award	1 week after draft submittal
Task 2 – Water Quality Monitoring in KY Tributaries of Tug Fork River	Deliverable 2: Monthly monitoring and analytical results	Within 1 week of completion of Task 1 and then monthly for no less than six and up to ten monitoring rounds within the proposed model calibration period from July 1, 2018 to June 30, 2019	Within 4 weeks after data submittal

E. REPORTING

All documentation and reporting under this Task Order shall be in compliance with contract requirements.

F. DELIVERABLES AND GENERAL PERFORMANCE

The contractor shall participate in meetings and conference calls arranged by the EPA TOCOR. The contractor shall, when requested by the TOCOR, provide supporting documentation when EPA is reviewing draft deliverables to facilitate EPA review and approval of the contractor's work. Documentation shall include the electronic files and detailed, written explanation of all steps and decisions. The contractor is expected to comply with this request when it is received from the TOCOR regardless of whether such a request is described in the individual tasks of this PWS. The contractor is expected to furnish this information in such a manner that no proprietary software will be needed for EPA to read, interpret, replicate or model any work product of this agreement, unless otherwise noted in this PWS or by written permission of the EPA TOCOR. The objective is that anyone with the appropriate skill level can use the information produced under this Task Order to check or duplicate the contractor's work for replication and/or verification. With this understanding of how this Task Order's data will be used, any elements

essential to successfully replicating analysis shall be provided to EPA in a commonly-used format.

The contractor shall provide to the TOCOR written evidence of the contractor's scientific/technical and editorial review on any Task Order **draft** product before submission to the EPA TOCOR for review. This process does not need to be performed by an independent peer reviewer. It is expected that all editorial review comments shall be addressed before deliverables are furnished to the EPA TOCOR for review (in the case of draft deliverables) or acceptance (in the case of final deliverables); and that questions raised by scientific/ technical review will be either addressed or discussed with the EPA TOCOR prior to the contractor furnishing draft deliverables.

All deliverables (draft and final) to EPA shall be furnished in an electronic format that EPA can support (see TSAWP Contract PWS Section 4.0 Deliverables). All final deliverables shall be prepared according to EPA publication guidelines and shall be compliant with Section 508 of the Americans with Disabilities Act.

All draft and final deliverables from the contractor under this PWS are potentially subject to Freedom of Information Act requests.

All submittals to EPA shall be formatted as described below:

- Any written reports, summaries or analysis documents shall be in electronic Microsoft Word©.
- Any and all spreadsheets, raw data, coding and modeling work (including all model runs with essential data to replicate model runs) shall be in electronic Microsoft Excel© or XML formats.
- All analytical data will be transferred directly from the laboratory's LIMS in the approved according to the spreadsheet template (as described in Task 2).

Appropriate electronic format that is supported by EPA and printing of all GIS data layers, maps, photos, bench sheets and other written material not easily printed or saved in the above formats will be discussed and a format agreed upon with the EPA TOCOR prior to submittal by the contractor.

G. ANTICIPATED TRAVEL

All travel under this Task Order shall be in compliance with contract requirements and only according to specific written Technical Direction from the TOCOR. (See contract clause H-17). The vast majority of interactions will be conducted through conference calls. When in-person meetings are required, the length of the meetings and the amount of contract personnel needed for each trip will be provided to the contractor through written technical direction from the TOCOR.

H. CONTRACTOR IDENTIFICATION

Contractor personnel shall always identify themselves as Contractor employees by name and organization and physically display that information through an identification badge. Contractor personnel are prohibited from acting as the Agency's official representative.

The Contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the EPA TOCOR.

I. MEETING GUIDELINES AND LIMITATIONS:

Travel is not anticipated to be routine under this contract. EPA expects that the majority of the dollars to go toward the development of the technical documents. EPA projects that none of the individual meetings identified in these tasks will exceed a total cost of $1,000 with total travel not to exceed $5,000. The contractor shall immediately notify the EPA Contracting Officer, PO and TOCOR of any anticipated individual event which meets the definition of a "conference," with total net expenditures anticipated to be greater than $20,000.

A **"conference" or "conference-related activity"** is an internal or external meeting, retreat, seminar, symposium or event that involves expenses from the following categories: attendee travel paid for by the EPA; training activities; or EPA hosted or co-hosted, sponsored or co-sponsored events incurring speaker fees, food and refreshment expenses, non-federal facility expenses, audio visual expenses and/or contract related conference expenses. **"Conference expenses"** are all direct and indirect conference costs paid by the government, whether paid directly by agencies or reimbursed by agencies to travelers or others associated with the conference, but do not include funds paid under federal grants to grantees. Conference expenses include any associated authorized travel and per diem expenses, hire of rooms for official business, audiovisual use, light refreshments, registration fees, ground transportation, and other expenses as defined by the Federal Travel Regulation. All outlays for conference preparation and planning should be included. The FTR provides some examples of direct and indirect conference costs included within conference expenses. After notifying EPA of the potential to reach this threshold, the contractor shall not proceed with the task(s) until authorized to do so by the Contracting Officer.

J. QUALITY ASSURANCE SURVEILLANCE PLAN: Per contract requirements as supplemented herein:

EPA anticipates that the contractor's work will be judged "satisfactory" according to the QASP if the TOCOR's edits to deliverables are no more than ten percent (10%) of the content of any draft deliverable, or less than two percent (2%) of any final deliverable. In addition, EPA anticipates that the Contractor's work will be judged "satisfactory" according to the QASP if less than ten percent (10%) of the pages of written final deliverables contain the TOCOR's edits for such things as grammar, punctuation and format. The EPA TOCOR can upon request furnish a copy of the EPA correspondence manual for the contractor's use.

K. VALIDATION OF SECTION 508 COMPLIANCE OF TASK ORDER DELIVERABLES

The Contractor shall support the TOCOR in conducting a "Final Deliverable Validation" to ensure compliance with Section 508 and the Federal Acquisition Regulations (FAR) related to " electronic and information technology (EIT) deliverables". The Contractor shall furnish certification, in writing, to the TOCOR that the Contractor has complied with EPAAR Clause 1552.211-79 "Compliance with EPA Policies for Information Resources Management", including the requirement that all electronic and information technology (EIT) deliverables be Section 508 compliant in accordance with the policies referenced at [HYPERLINK "http://www.epa.gov/accessibility/"] .

L. REFERENCES

Links to background documents relevant to this PWS:

U.S. EPA. 2011. A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams. Office of Research and Development, National Center for Environmental Assessment, Washington, DC. EPA/600/R-10/023F.
[HYPERLINK "https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=233809"]

U.S. EPA. 2011. The Effects of Mountaintop Mines and Valley Fills on Aquatic Ecosystems of the Central Appalachian Coalfields (2011 Final). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-09/138F, 2011.
[HYPERLINK "https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=225743"]

U.S. EPA. 2016. Draft Field-Based Methods for Developing Aquatic Life Criteria for Specific Conductivity. Office of Water, Washington, DC. EPA-822-R-07-010.
[HYPERLINK "https://www.epa.gov/wqc/draft-field-based-methods-developing-aquatic-life-criteria-specific-conductivity"]

M. GOVERNMENT FURNISHED INFORMATION

The following information can be provided to the contractors by request:

- Memorandum of Agreement Between WVDEP and EPA Regarding Submission of TMDLs for Biologically Impaired Waters Pursuant to Section 303(d) of the Clean Water Act, 33 U.S.C. § 1313(d)
- WVDEP's Draft Watershed Assessment Branch 2018 Field Sampling Standard Operating Procedures, revised June 7, 2018
- WVDEP's Draft Watershed Assessment Branch Quality Assurance Project Plan, revised May 24, 2018